T.E. Civil VI CBGS
Env. Engg - I

01.6.2016

QP Code : 577700

(3 Hours) **[Total Marks : 80**

N.B. : 1) Question **number one** is **compulsory.**
2) Attempt **any three** of remaining **five** questions.
3) Assume **suitable** data if **required**.
4) Draw **neat sketches** wherever **necessary**.

1. Solve **any four** of the following: **20**
   A) Enlist & explain factors affecting design periods.
   B) What are the characteristics of hazardous wastes?
   C) Explain Break point of chlorination.
   D) State the factors affecting location of Intake Structure.
   E) Explain Dead End & Radial systems for water distribution with neat sketches.

2. A) Design a rectangular sedimentation tank to treat 2 MLD of water. Assume detention time of 3Hrs. & flow through velocity of 7.5 cm/min. If the depth of tank is 3m, find the overflow rate & dimensions of the tank. **10**
   B) Differentiate between Rapid sand gravity filter & Slow sand filters. **6**
   C) Describe with neat sketch the working of pressure filter. **4**

3. A) What is leachate? How leachate is controlled in the landfill site? Explain with neat sketch. **10**
   B) Explain different methods of disinfection & its suitability. **10**

4. A) Design a Rapid sand filter for a population of 1,00,000 which is to be Served by a 200 lit/head/day water supply. **10**
   B) Explain the physical, chemical & biological characteristics of water. Write the standards for potable water. **10**

5. A) Define water softening. Explain zeolite process with neat sketch. **10**
   B) Enlist various methods of population forecasting. Explain any one in detail. **5**
   C) Shortly explain the mechanism of flocculation & coagulation. **5**

6. Write short note on following **(Any four)** **20**
   I) Sources of solid waste.
   II) Removal of Iron & Maganese.
   III) Tube settler
   IV) Water borne diseases.
   V) Appurtenances in distribution system.